

Association for Information Systems AIS Electronic Library (AISeL)

PACIS 2010 Proceedings

Pacific Asia Conference on Information Systems
(PACIS)

2010

Does Privacy Still Matter in the Era of Web 2.0? A Qualitative Study of User Behavior towards Online Social Networking Activities

Qing Hu

Iowa State University, qinghu@iastate.edu

Shuo Ma

Nanjing University, michaelmashuo@gmail.com

Follow this and additional works at: <http://aisel.aisnet.org/pacis2010>

Recommended Citation

Hu, Qing and Ma, Shuo, "Does Privacy Still Matter in the Era of Web 2.0? A Qualitative Study of User Behavior towards Online Social Networking Activities" (2010). *PACIS 2010 Proceedings*. 2.
<http://aisel.aisnet.org/pacis2010/2>

This material is brought to you by the Pacific Asia Conference on Information Systems (PACIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in PACIS 2010 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

DOES PRIVACY STILL MATTER IN THE ERA OF WEB 2.0? A QUALITATIVE STUDY OF USER BEHAVIOR TOWARDS ONLINE SOCIAL NETWORKING ACTIVITIES

Qing Hu, College of Business, Iowa State University, Ames, IA, USA,
qinghu@iastate.edu

Shuo Ma, School of Management, Nanjing University, Nanjing, China,
michaelmashuo@gmail.com

Abstract

In this study, we attempt to understand one frequently observed paradox in user social networking behavior – highly concerned about privacy issues on social networking sites, yet actively participating in social networking activities. Based on qualitative analysis of student essays on their social networking activities and perceptions, we propose a theory for user online social networking behavior – the adaptive cognition theory (ACT). The main argument of the theory is that user behavior toward social networking is dynamic and adaptive primarily influenced by the perceived benefits and risks. More often than not, the perceived benefits dominate the perceived risks in user behavior calculus, resulting in the commonly observed phenomenon that users seem to ignore privacy concerns when participating in social networking activities and using social networking web sites. We argue that ACT explains user social networking behavior better than well-established behavioral theories do such as TAM, TPB, and rational choice. Furthermore, ACT provides prescriptive insights for managers of social networking sites and companies interested in taking advantage of the social networking phenomenon. Limitations and future research directions are discussed as well.

Keywords: Social Networking, Privacy, Web 2.0, User Behavior.

1 INTRODUCTION

As the primary component of the Web 2.0 movement, social networking sites (i.e., Facebook, Myspace, Twitter, and LinkedIn) have experienced exponential growth in term of user participation, variety, and volume of data generated over the last decade. According to a recent report by Forester Research (Anderson et al. 2009), about one third of the US adult population, or approximately 55.6 million, visit social networking sites at least once a month in 2009, doubling the number in 2007. Among these users, about 60% indicated that they visit the two dominant social networking sites (Facebook and Myspace) weekly. Undoubtedly, online social networking has become an integral part of life in a significant segment of the population, and has started to show its intended or unintended consequences. Understanding, predicating, and managing these consequences will pose significant challenges to social scientists, corporate management, and government policy makers in the coming decades.

It is thus not surprising that social networking has attracted strong interests from scholars in a variety of academic disciplines in recent years given the tremendous growth and impact of the social networking phenomenon on individuals, businesses, and society. One of the core issues of the research is the increasing concern over the erosion of individual privacy as individual's digital footprints are being collected, analyzed, and used by institutions such as the social networks sites and government agencies and by individuals such as computer hackers who have penetrated the security defenses of the institutions that collect, store, and manage the private data users have entrusted to them (Culnan and Williams 2009). While privacy has been at the center of attention of scholars, individual users seem to be less concerned when it comes to participating in online activities. Nguyen and Hayes (2010) have shown that people can be highly concerned with privacy while simultaneously reporting significantly less concern regarding the use of everyday technologies that collect, process, and disseminate personal information. Similar phenomenon has been observed by others including Acquisti and Gross (2006), Stutzman (2006), Edwards and Brown (2009), and Debatin et al. (2009).

Our own observations of student online behavior support the argument that users might talk about privacy concerns about online purchases or social networking, they show little concern about privacy when it comes to using social networking sites. In this study, we are interested in finding out why it is so. Earlier research on user privacy in the context of the Internet and online activities largely assumed that privacy concerns are a major factor and focused on how such concerns are formed (Dinev and Hart, 2006; Dinev et al., 2006; Xu et al., 2008). It was only recently scholars started to focus on the role of privacy concerns in influencing user online behavior (Debatin et al. 2009; Edwards and Brown 2009; Acquisti and Gross 2006). In this study, we are more interested in finding out: 1) Are users really concerned about their privacy when conducting online activities such as social networking? 2) If they are, why is that the users still actively participating everyday in social networking activities? And 3) if they are not, how do we explain the privacy concerns identified in the extant literature? We believe by investigating these important and interesting questions, we can make significant contributions not only to the extant privacy literature but to user online user behavior in general.

2 RESEARCH BACKGROUND

Social networking in the online environment is, in essence, a form of computer-mediated communication (Boyd and Ellison 2007). As a result, the wide spread use of online social networking sites by the population in general has spawn a strong interest among academics in a variety of disciplines, including sociology, psychology, communication, computer science, and information systems. Naturally, these scholars have approached the study of social networking from different theoretical perspectives and methodological paradigms. For a relatively comprehensive review of the social networking research, see Boyd and Ellison (2007). In the published literature, one area of research is of special interest to us as far as user behavior in online social networking activities is concerned, that is, the research on privacy and how privacy concerns affect user behavior in online communities.

The concept of privacy is complex and has different meaning to different people and in different disciplines (Margulis 2003; Xu et al. 2008). In this study, we are concerned with information privacy and we adopt the definition by Culnan and Bies (2003) that information privacy is the ability of individuals to control the terms under which their personal information is acquired and used, where personal information is information identifiable to an individual. Thus, in the context of Internet and social networking, privacy issues are about how personal information is disclosed, collected, distributed, and used either with or without the individual's knowledge and permission. In an ideal world, an individual would have full knowledge of how personal information is used by any other entity and full control over what, when, and how personal information is disclosed. In reality, of course, such ideal does not exist, and information privacy is always a matter of degree. As long as users are comfortable with the scope of distribution, the level of use, and the degree of disclosure, there are no privacy concerns by the individual. Research has shown that individuals are willing to disclose personal information in exchange for certain economic or social benefits if they believe that such information will be used fairly and without negative consequences (Culnan and Armstrong 1999).

Unfortunately, the emergence of the Internet as a primary communication platform in the last two decades has significantly weakened an individual's ability to control disclosure and strengthened the other parties' ability to collect, compile, distribute, and use of personal information, tilting the privacy balance against the individuals. The advances in both the technology and the Internet culture have put information privacy issues in the headlines of mainstream media (Kornblum and Marklein 2006) and the forefront of academic research (Boyd and Ellison 2007). This is largely due to the unprecedented capability of the Internet for sharing information among a large number of individuals with minimal effort. Never before has it been so easy to share one's information with thousands even millions of individuals across the globe via Facebook, Myspace, YouTube, and all types of blogs and forums in the online eco-system. On the other hand, the extensive global e-commerce activities from small antique sellers to multi-billion dollar retailers on the web have made personal information extremely valuable to corporations (Culnan and Armstrong 1999) and criminals and organized crimes (Saunders and Zuker 1999). The degree and scope of privacy invasion and abuse have thus reached unprecedented levels in human history.

With the advent of online social networking sites and communities, information privacy has become an increasingly potent issue for individual users of these services (Boyd and Ellison 2007). Some key research questions are: Are users even aware the magnitude of the privacy issues in online communities? How have information privacy concerns influenced user behavior in the online world? Why would users share so much in social networking sites personal information they would not even consider sharing in the offline world? Recent research on these questions has raised more questions than answers. Acquisti and Gross (2006) examined college students' Facebook profiles and surveyed their attitude towards privacy and other issues. They found that Facebook users expressed a high level of privacy concerns yet revealing significant amounts of personal information in their profiles. They attributed this apparent dichotomy to peer pressure, unawareness of the true visibility of their profiles, and trust in the web site and its users. Debatin et al. (2009) provided a detailed account of the privacy issues related to the most popular social networking sites. They argued that Facebook and other social network sites pose severe risks to the privacy of their users but at the same time seem to provide a high level of gratification to the users, making them extremely popular. Their survey of college students indicated that while the majority of the Facebook users claim they were familiar with privacy settings and were protecting their profiles, they allowed large number of "friends," many of whom they had only heard of through others or did not know at all, to access their detailed personal information. The authors suggested that this could be attributed to two primary reasons: the ascription of risk to others and the lack of awareness and comprehensive to the real risk posed by data mining and persistence of online profile data into the future.

The current literature to a large extent attributes the apparent discrepancy between the level of user privacy concerns and the extent of user information disclosure to incomplete comprehension or inadequate awareness of the real risk of information privacy in the era of Internet and social networking. However, few, if any, scholars have addressed the critical question: are users truly not aware the danger or are they just ignoring the danger in favour of the gratification presented by social

networking sites and activities? Furthermore, almost all studies assumed a static user decision model regarding participation in social networks and information disclosure. Could user attitudes toward information privacy and information disclosure change over time based on their experience with social networking activities? In this study, we attempt to address these questions with a qualitative analysis of college student essays about their experience with and perception of privacy in social networking activities.

3 DATA AND METHOD

In this study, we adopted a qualitative approach for studying and understanding user behavior in online social networking communities. The data we used are essays written by undergraduate students enrolled in class at a large public university in the United States. Students were given an assignment to write an essay about what they considered as privacy and whether and how privacy concerns influenced their behavior in participating social networking activities. They were also asked to discuss the primary motivations for joining social networking sites and the primary fears of the negative consequences of their social networking activities. The essay instruction stated that there is no right or wrong points of view. There were 37 students enrolled in the class and all of them submitted the essay in electronic form within specified deadline. However, only 16 students provided demographic and usage information in a separate survey. Table 1 shows the demographic profiles of the respondents, and Table 2 shows the statistics of their social networking usage.

Demographic	Category	Count	Percentage (%)	Cumulative (%)
Gender	Male	12	75.00	75.00
	Female	4	25.00	100
Age	<20	0	0	0
	20-30	15	93.75	93.75
	>30	1	6.25	100
Major	MIS	14	87.50	87.50
	Business	2	12.50	100
	Non-Business	0	0	0
Employment	Full-time student	11	68.75	68.75
	Full-time employee	1	6.25	75.00
	Part-time student	4	25.00	100%

Table 1: Demographics of Respondents

Activity	Category	Count	Percentage (%)	Cumulative (%)
Average hours using computer per day	< 5	3	18.75	18.75
	5 -10	9	56.25	75.00
	10-15	4	25.00	100
	>15	0	0	100
Average hours using social networking per day	< 1	3	18.75	18.75
	1-2	8	50.00	68.75
	3-4	4	25.00	83.75
	>4	1	6.25	100

Table 2: Statistics of Social Networking Usage

The overall characteristics of the respondents can be described as follows. They are mostly male students (75%) between the age of 20-30 (93.75%) enrolled in MIS undergraduate program (87.5%). The majority of the respondents are fulltime students (68.75%), typically spend 5-10 hours per day

using computers. About 50% of the respondents spend 1-2 hours on social networking activities per day, and about 25% spend less than 1 hour or between 3-4 hours per day.

The qualitative text analysis software NVivo 8 was used to assist the coding and analysis of the essays. One author read the essays carefully first, then developed a coding scheme based on the contents of the essays. The scheme included an initial set of parent tree nodes representing the major categories of concepts reported in the essays, such as “Motivation”, “Initial Decision”, “Fear”, “Protection”, “Privacy Concerns.” Under each of the parent tree nodes, child nodes were created to capture the specific ideas and thoughts of the respondents. For instance, under “Motivation,” there are 7 child nodes including “Distraction”, “Identity Theft”, “Personal Image,” etc.

This coding scheme is then given to the second author and a graduate assistant to code the essays independently. The coders were instructed to create free nodes – nodes that do not belong to any tree node – whenever necessary. After the coding was complete, the authors analyzed each of the free nodes and merged them into the appropriate tree nodes. The inter-code reliability between the two coders was high, in the range of 95%-100% for all tree nodes based on the statistics provided by NVivo. This could be a result of two factors. First is that the essays are relatively similar in structure and content, so there is not much ambiguity when coding. The second is that the initial set of tree nodes were detailed enough that captured most, if not all, of the concepts reflected in the essays.

4 ANALYSES AND THEORY DEVELOPMENT

One of the powerful features of text analysis software such as NVivo is that it enables to researchers to see the macro-patterns in unstructured text data while still being able to drill down to the micro-structures and sentences when needed with accuracy and efficiency. In this section, we develop our research propositions regarding user behavior associated with online social networking sites based on the patterns emerged in the NVivo coding and propose a theory for user behavior in online environment.

With the primary objective of understanding how privacy concerns has anything to do with user online behavior in the context of social networking, we first describe the process how users actually started their social networking activities. This is then followed by how this initial involvement became a routine activity while discovering the benefits and risks of social networking. Rather than being deterred by many of the privacy concerns and risks associated with social networking activities, our typical users seem to be able to adjust and adapt to this new socio-technical environment by utilizing different tools and techniques afforded to them by the social networking sites and the Internet, which eventually led to more exploration and exploitation of the social networking activities. The bottom line is, instead of becoming restrained or concerned, most of the users seemed to become more adventurous and comfortable over time, firmly believing in that they were in control of the situation. This sense of control enables more involvement in social networking activities.

4.1 Initial Involvement

The reading of the essays reveals of a relatively consistent story about how an individual got started with social networking. Most of the respondents became aware of the existent of the social networking sites and their functionality through their peers. Then what they saw and heard about social networking were mostly the benefits. Table 3 lists some of the primary motivations the respondents stated why they decided to join and use social networking sites.

Motivations for Joining	Typical Quote
Peer pressure	<p>“The only reason I got a Facebook account was because everyone on my floor was making one.”</p> <p>“By using Facebook, I feel that I am complying to the status quo of the Generation Y. It gives me a topic of discussion for conversations.”</p>

	“Second, every college student has a Facebook page. Therefore, if you don’t have one, you are often seen as an outsider.”
Curiorcity	<p>“I like to read profiles of new friends to see what they think of themselves and see what things we have in common.”</p> <p>“Another thing that attracted me for creating a Facebook profile was curiosity. It’s always fun to know how my friends are doing and what is going on their life these days.”</p>
Networking	<p>“The main reason for me to use social networking sights is just that, to network with people, as well as keep in touch with people that I might otherwise not have a means to. I also use sights such as Facebook to get back in touch with people that I have not had contact with for years and would like to get back in touch with.”</p> <p>“Since I no longer see most of my high school friends, Facebook is a nice way of at least having a way to communicate with them. Additionally, I can use Facebook to find family and friends that have moved to different parts of the country or world. There are a wide variety of Facebook applications available to users.”</p>
Entertainment	<p>“Another reason I use a social network such as Youtube, is for entertainment. I can watch videos – like the one we had to watch for this class, listen to music that I don’t want to download, and watch other videos just for entertainment.”</p> <p>“Facebook makes it easy to share interesting and funny links between friends. Sometimes, I enjoy watching people’s posts and thoughts about certain events, such as icy conditions in last Thursday.”</p>
Self-expression	<p>“Finally, I like to be able to express myself. Social Networking allows you to do just this by providing features, like photos, statuses, and friend interactions.”</p> <p>“I also get to express myself and I feel good and satisfied whenever I post photos of me and friends having fun and share with my other friends.”</p>

Table 3: Motivations for Joining and Using Social Networking

The evidence suggests that when the individuals first contemplated whether to join social networking sites, the benefits dominated the decision calculus. These benefits include meeting the functional needs for networking, appearing normal to peers, and staying connected with friends and family, and satisfying the inner desire for curiosity, entertainment, and self-expression. This leads us to propose:

Proposition 1: The initial decision to join and use social networking sites is largely motivated by the perceived benefits of social networking. There is little, if any, consideration for privacy and risk consequences associated with social networking activities.

4.2 Privacy Concern vs. Privacy Control

Once using social networking sites as part of the life routine, users start to discover more details about particular functionalities of the social network sites and to become aware some of the potentially negative consequences of their activities. Table 4 lists some of the privacy issues users discovered after using social networking sites.

Privacy Issues	Typical Quote
Privacy Concerns	<p>“I do have concerns about my privacy from time to time. I worry occasionally about potential negative consequences, and as a result I have removed some ‘unflattering’ material.”</p> <p>“Privacy concern is something I think about all the time when using social networking sites. Anytime posting anything I think of the consequences.”</p>

Privacy Control	<p>“Most social networking sites will allow you to send messages privately to individuals. If I really want to share something over the internet I am confident that I can adjust the privacy settings to where it will not reach and audience it is not intended for.”</p> <p>“An example of something that I would do to safeguard my information is that I set the privacy settings on Facebook so that only my friends my view certain pieces of information about me.”</p>
-----------------	---

Table 4: User Perceptions of Privacy Concerns and Privacy Control in Social Networking

The evidence shows that there were two concurrent factors that were in users’ minds when they were participating in social networking activities. On one hand, users seemed to be worried about the consequences of disclosing personal information on the social networking sites, which naturally inhibit more activities. On the other hand, the privacy control settings offered by the social networking sites seemed to give users a sense of control, that is, “I know what I am doing and I control who can access and view my information.” Which of the two opposing factors – privacy concern or privacy control – dominates user behavior calculus will depend on the particular users and their experiences and circumstances. Hence, we propose that:

Proposition 2: The initial use of social networking sites and participation in social networking activities lead to the discovery of privacy controls and other privacy management facilities offered by the social networking sites, which increase the tendency to the exploratory use of the social networking sites.

Proposition 3: The initial use of social networking sites and participation in social networking activities lead to the discovery of privacy concerns over the unwanted disclosure of information posted to the social networking sites, which decrease the tendency to the exploratory use of the social networking sites.

4.3 Benefits vs. Fears

Given the small or even negligible number of users who actually quit social networking due to concerns of privacy (3 out of 37 indicated that they had quit using it after initial tries), it can be safely assumed that the benefits had won over the risks in users’ minds regarding social networking. While the realized benefits of using social networking are similar to the original motivations, as listed in Table 3, users also started to fear the negative consequences related to social networking activities. Table 5 lists some of these fears our respondents had identified.

Fears about Social Networking	Typical Quote
Professional Image	<p>“My biggest fear using social networking sites is to have a potential employer look at my profiles and see something that they don’t like, and in turn, not hire me for a job or not get an interview.”</p> <p>“Also, I don’t want potential employers reading crazy wall post from my buddy over the weekend. My boss from the internship I had this summer told me she was able to find the profiles of all but one of the applicants before they even came to the interview!”</p>
Identity Theft	<p>“The scariest thing about social networking sites for me is the risk it puts you at for identity theft.”</p> <p>“The issue I have with identity theft is that people could easily take my pictures and repost them as their own or in a damaging way, for example with Photoshop.”</p>
Personal Safety	<p>“I don’t want people to look at my profile and be able to figure out where I live, what I do, or who I am, unless I want them to.”</p>

	<p>“People use Facebook every day to creep. There have been situations all over that stalkers have endangered a peer. I believe someone may know you as a person on Facebook and know everything about you, but never have met you in person.”</p>
Loss of Privacy	<p>“The biggest being a loss of privacy. I do have the fear that people will learn more about me than needed. I don’t want people to look at my profile and be able to figure out where I live, what I do, or who I am, unless I want them to.”</p> <p>“Things I fear would be the loss of privacy (by having everyone know everything about you), the negative consequences that could arise (such as losing a job) and the other things that can happen such as someone else getting into your account and doing things without you knowing.”</p>
Wrong Impression	<p>“I also do not always want to be associated with some people who chose to partake in activities that do not reflect my morals, which can occasionally be implied by some social networking associations (comments in the same space, photographs, etc.)”</p> <p>“I fear someone prejudging me based on my Facebook or Twitter. These sites still do not entirely represent an individual.”</p>
Distraction	<p>“Third, I often find Facebook to be very distracting. Whenever I’m working on a computer, Facebook is just one click away. As a result, sometimes I end up browsing Facebook rather than doing homework.”</p> <p>“I have participated in a few social networking sites and while it can be fun at times there are also times where I wished I never got started on it. It can be very easy to waste a lot of time or become a large distraction.”</p>

Table 5: User Perception of Fear in Social Networking

Given the evidence on users’ discovery of the benefits and the risks of using social networking sites, we propose that:

Proposition 4: The use of the social networking sites leads to the realization of the expected benefits of using social networking sites and the discovery of the fear of the negative consequences of using social networking sites.

4.4 Reinforcement and Feedback

User behavior in social networking activities will not remain at a static state. Rather it is the outcome of a dynamic process in which positive and negative feedbacks constantly influence the behavior outcome. As users continue to use social networking sites, either by expanding the extent or scope to gain maximum utility or by restricting participation in terms of time and control to reduce risk, the user will inevitably experience or become aware of positive or negative episodes related to social networking. As rational beings, the users will process the information and adjust their actions accordingly. Table 6 list some of comments of our respondents.

User Behavior	Typical Quote
Use Protection	<p>“As far as Facebook is concerned, I have my profile blocked as best I can. Right now anyone can find me on Facebook. But you can only see my profile – my pictures, my wall posts, my statuses – if you friend me. And I am only going to friend those who I know.”</p> <p>“I don’t post messages or information about myself to be publicly seen by the internet world. There are options to only show and share information with friends, friends who I have approved of. I only share information with friends that I would not mind if it was publicly seen, but I still keep the sharing among friends.”</p>
Manage Impression	<p>“When I participate in social networking sites, whether posting my own content or commenting on others’, I try to avoid posting anything that I would not want to</p>

	<p>“claim” in front of my friends, my parents, or my future potential employers’. I also monitor pictures of me put up by other people to make sure that it is something which I want made public.”</p> <p>“I always de-tag myself from content I think might be questionable not only in the present, but in the future as well. From my research, de-tagging and refraining from posting questionable comments are the only ways to protect myself from any negative future impact.”</p>
--	--

According to the rational choice theory of human behavior (Simon 1955), individuals seek to maximize the expected utility or minimize the expected risk of the behavior alternatives through rational calculus which is subject to internal (the individual characteristics) and external (environment characteristics) constraints. Although rational choice theory has been criticized for its inability to explain irrational behaviors common in human society, it has been a predominant theoretical foundation for economics, criminology, sociology, and other social sciences (Becker, 1968; Sugden, 1991). In this study, we subscribe to the fundamental framework of rational choice theory in building our behavioral model for social networking. In social networking activities, users are presented with immediate and tangible benefits and relatively remote and vague risks, as discussed above. The specific user behavior will be the outcome of two imposing forces. On one side, the benefits of using social networking, such as increased networking with family, friends, and employers, will push for more use and more sophisticated use of social networking sites. On the other hand, the fears of social networking consequences, such as loss of privacy, identity thefts, and damage to personal and professional image, will curb or restrict the desire for using social networking sites. The outcome of this calculus is the equilibrium state of managed use. Thus, we propose that:

Proposition 5: The immediate and tangible benefits and the remote and vague fear of negative consequences lead to the managed use of social networking sites.

What can be deduced from the evidence is that users gradually become mature in terms of mastering the technology and understanding the consequences as they continue to use social networking and participate in social networking sites. The negative consequences cause them to take precaution and protections, and the positive consequences motivate them to continue. While taking protective actions can be considered as a natural response to perceived threats, some users have moved beyond protection and into active impression management – the presentation of versions of the self to different audiences (Goffman 1959), such as keeping different profiles on multiple social networking sites and monitoring postings on the Web about themselves and de-tagging pictures if necessary. The result of the battle between the two opposing forces is the equilibrium state of managed use – a state where a user actively protects his/her information and consciously managing his/her presence in the social networking environment. Thus, we propose that:

Proposition 6): The managed use of social networking sites will increase the realized benefits of social networking, thus reinforces the use of social networking.

Proposition 7: The managed use of social networking sites will decrease the fear of negative consequences of social networking, thus reinforces the use of social networking.

4.5 Adaptive Cognition Theory of Social Network Participation

The discussion presented in the previous section leads us to propose the adaptive cognition theory (ACT) of social network participation. ACT in essence postulates that user participation in social networking activities can be divided into three distinct phases: Initial Use (IU), Exploratory Use (EU), and Managed Use (MU), and the progression of a user from one phase to another is a result of continuous discovery and comprehension of the benefits and risks and adaptation of activities and controls. In the IU phase, the user becomes aware of the existence of social networking sites primarily through peers and perceived benefits of social networking dominate his/her decision calculus. Privacy concerns, if any, are largely ignored in this phase. The actual use of social networking sites by the user eventually leads to the discovery of privacy issues as well as the mechanisms for privacy control.

It is primarily due to this sense of control that the user overcomes the concerns and progresses into the EU phase. In this phase, the user expands reach and depth in using social networking sites. Typical indicators for reach are having multiple social networking accounts and adding more friends and links to their social networking sites; and indicators for depth are becoming more active in posting materials on to these sites, and spending more hours on social networking activities. It is during the EU phase that the user starts to appropriate the benefits of social networking, such as benefiting from the connections and information sharing, and drawing satisfaction from entertainment and discoveries. At the same time, the user also becomes more aware of the risks and grows increasingly concerned about the risks. The two opposing forces eventually push the user into the MU phase where an equilibrium of the forces will be temporarily reached, creating a stable state of use. However, such stability is relative and the delicate balance between the forces can be easily broken by negative experiences or positive reinforcements. Relatively problem-free use of social networking can embolden the user to move up the managed use to higher levels in terms of reach and depth. On the other hand, negative episodes will likely cause the user to lower the level of managed use and even to quit completely in certain cases.

5 DISCUSSION

In the previous section, we described the adaptive cognition theory (ACT) of social networking behavior based on a detailed analysis of the essays written by student subjects on their experience with social networking. This naturally raises a few critical questions. What does ACT add to the extant literature on social networking? What does ACT contribute to the theory and practice of social networking? We argue that ACT differs from the extant theories about user behavior in a number of significant ways in the context of social networking. If we consider the use of social networking sites from the technology acceptance perspective, then two extant theories dominate the current literature: technology acceptance model (TAM) and its derivatives (Davis 1989; Venkatesh et al. 2003), and theory of planned behavior (TPB) (Ajzen 1991). Comparing to TAM and TPB, two unique features of ACT stand out. First, ACT is a dynamic behavioral model which emphasizes that user behavior toward the use of a technology, i.e., social networking, will continuously change given the strength of the opposing forces, and the intermittent equilibriums will be reached and broken regularly. In contrast, both TAM and TPB suggest a static outcome: the technology is either used or not used, which clearly does not fit well with our evidence on social networking. Second, both TAM and TPB neglect the cost factors when considering user behavior. Although constructs such as perceived ease of use and attitude could be affected by the cost of using technology, the utility assumption underlying the rational choice theory requires explicit treatment of cost factors in human decision models. In contrast, ACT is based on the rational choice theory and explicitly incorporates the benefit-cost calculus in modeling human behavior.

If we consider user participation in social networking from the communication perspective, then three salient theories exist (Debatin et al. 2009): the “uses and gratifications” theory, the “third-person effect” approach and the theory of “ritualized media use.” The key difference between ACT and these theoretical frameworks is its dynamic and adaptive dimension in describing user social networking behavior. Almost all current theories regarding user online behavior assume a static state of decision equilibrium: once the perceived benefits are greater than the perceived risks, the chosen behavior is either associated with maximizing the benefits or minimizing the risk. In contrast, ACT argues that the equilibrium is always relative and could be disturbed at any moment by either positive or negative inputs to the decision calculus. Such input could be either a positive experience on the benefits or a negative episode of fears. In any case, ACT suggests that user behavior on social networking sites is volatile in nature. It may appear stable for a long time only if no negative disruption occurs.

The ACT framework has at least two significant implications to practice. First, it shows that user behavior towards social networking sites and activities are dynamic and volatile, thus cannot be taken for granted by any party in the ecosystem of online social networks. Social networking sites cannot ignore user needs and concerns when creating new features and policies. At anytime small changes could tilt the delicate balance one way or another, leading to either significantly increased use or

quick abandonment. Second, social networking sites should devote significant energy and creativity to increase user control over information on the social networking sites. The sense of control reduces the perception of fear and increases the perception of benefit, which lead to higher level of managed use and participation.

6 CONCLUSIONS

We attempted to understand one frequently observed paradox in user social networking behavior – highly concerned with privacy issues on social networking sites, and yet actively involved in social networking activities. Based on a qualitative analysis of student essays about their social networking activities and perceptions, we proposed a theory for user social networking behavior – the adaptive cognition theory (ACT). The main argument of the theory is that user behavior toward social networking is dynamic and adaptive primarily influenced by the perceived benefits and perceived risks. More often than not, the perceived benefits dominate the perceived risks in user behavior calculus, resulting the commonly observed phenomenon that users seem to ignore privacy concerns when participating in social networking activities and using social networking web sites. We argue that ACT explains user social networking behavior better than well-established behavioral theories such as TAM and TPB. Furthermore, ACT provides prescriptive insights for social networking practices that the established theories.

We must also point out a few significant limitations of this study. First, since our respondents were students enrolled in a single class, there may be response bias due to the specific format of the essay assignment. Students were not completely free to describe their experiences and feelings about social networking. Second, the coding using NVivo was exploratory and the coding scheme was preliminary. Therefore, it is possible that some of the deeper thoughts and relationships were not revealed due to the limitations of the scheme. And finally, the sample size is relatively small for developing a concrete theory. The proposed theory is only the first attempt to understand this interesting phenomenon and exploratory in nature. These limitations leave us with a number of future research opportunities. The first could be to collect data from a larger sample with free style essays. This approach could lead to larger data sets with richer insights. The second could be to develop a more refined coding scheme for NVivo and to reveal more complex relationships among the major concepts and constructs.

Although social network sites and social networking phenomenon have been rapidly progressing over the last decade, the research about social network is still nascent and only emerging in the last few years. Beer (2008) stated that this is the moment to define the parameters and scope for social network research and the agenda set today may well shape how we study and understand social network in the future. By adding the dynamic and adaptive dimensions into the user behavior model, we hope this study serves as a starter for a new stream of research on social networking and a baseline for theory development in this arena.

References

- Acquisti, A. and Gross, R. (2006) Imagined Communities: Awareness, Information Sharing, and Privacy on the Facebook, in G. Danezis and P. Golle (Eds.): PET 2006, Lecture Notes on Computer Science. 4258, 36–58.
- Ajzen, I. 1991. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Anderson, J., Reitsma, R., and Liackman, B. (2009) Consumer Behavior Online: A 2009 Deep Dive, Forrester Research, Inc.
- Becker, G. (1968) Crime and Punishment: An Economic Approach. *Journal of Political Economy*, 76(2), 169-217.
- Beer, D. (2008) Social Network(ing) Sites: Revisiting the Story So Far: A Response to Danah Boyd & Nicole Ellison, *Journal of Computer-Mediated Communication*, 13, 516–529

- Boyd, D. M. & Ellison, N.B. (2007) Social Network Sites: Definition, History and Scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210-230.
- Culnan, M.J. and Armstrong, P. K. (1999) Information Privacy Concerns, Procedural Fairness and Impersonal Trust: An Empirical Investigation. *Organization Science*, 10, 104–115.
- Culnan, M.J. and Williams, C.C. (2009) How Ethics Can Enhance Organizational Privacy: Lessons from the Choice Point and TJX Data Breaches. *MIS Quarterly*, 33 (4), 673-687.
- Culnan, M.J. and Bies R.J. (2003) Consumer Privacy: Balancing Economic and Justice Considerations. *Journal of Social Issues*, 59 (2), 323-342.
- Davis, F. D. (1989) Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13,319-339.
- Debatin, B., Lovejoy, J.P., Horn, A.K., and Hughes, B.N. (2009) Facebook and Online Privacy: Attitudes, Behaviors, and Unintended Consequences. *Journal of Computer-Mediated Communication*, 15 (1), 83–108.
- Dinev, T., Bellotto, M., Hart, P., Russo, V., Serra, I., Colautti, C. (2006) Privacy Calculus Model in E-commerce – A Study of Italy and the United States. *European Journal of Information Systems*, 15(4), 389-402.
- Dinev, T. and Hart, P. (2006) An Extended Privacy Calculus Model for E-Commerce Transactions. *Information Systems Research*, 17(1), 61-80.
- Dinev, T. and Hu, Q. (2007) The Centrality of Awareness in the Formation of User Behavioral Intentions towards Preventive Technologies in the Context of Voluntary Use. *Journal of the Association for Information Systems*, 8(7), 386-408.
- Edwards, L. and Brown, I (2009) Data Control and Social Networking: Irreconcilable Ideas? In A. Matwyshyn (ed.) *Harboring Data: Information Security, Law and the Corporation*. Stanford University Press. CA.
- Goffman, E. (1959) *The Presentation of Self in Everyday Life*. Doubleday and Co., Garden City, NY.
- Margulis, S. T. (2003) Privacy as a Social Issue and Behavioral Concept, *Journal of Social Issues*, 59(2), 243--261
- Nguyen, D. H. and Hayes, G. R. (2010) Information privacy in institutional and end-user tracking and recording technologies. *Personal and Ubiquitous Computing*, 14(1), 53-72
- Herbert A. Simon (1955) A Behavioral Model of Rational Choice. *The Quarterly Journal of Economics*, 69(1), 99-118.
- Kornblum, J. and Marklein, M. B. (2006) What you say online could haunt you. *USA Today*, available at http://www.usatoday.com/tech/news/internetprivacy/2006-03-08-facebook-myspace_x.htm. Accessed on March 7, 2010.
- Saunders, K. M. and Zuker, B (1999) Counteracting Identity Fraud in the Information Age: The Identity Theft and Assumption of Deterrence Act, *International Review of Law, Computers, & Technology*, 13(2), 183-192.
- Sugden, R. (1991) Rational Choice: A Survey of Contributions from Economics and Philosophy. *Economic Journal*,101(407), 751-85.
- Stutzman, F. (2006) An evaluation of identity-sharing behavior in social network communities. *International Digital and Media Arts Journal*, 3(1), 10–18.
- Venkatesh, V., Morris, M.G., Davis, G.B, and Davis, F.D. (2003) User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27 (3), 425-478
- Xu, H., Dinev, T., Smith, H. J., and Hart, P. (2008) Examining the Formation of Individual's Privacy Concerns: Toward an Integrative View. *Proceedings of the 29th International Conference on Information Systems*, Paris, December 14-17.